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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,789	08/08/2001	Craig Weldon	051481-5074	9874

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EXAMINER

KRISHNAMURTHY, RAMESH

ART UNIT PAPER NUMBER

3753

DATE MAILED: 04/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/923,789

Applicant(s)

WELDON ET AL.

Examiner

Ramesh Krishnamurthy

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 9, 10 and 17 is/are rejected.
- 7) ☒ Claim(s) 5-8 and 11-16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> . | 6) <input type="checkbox"/> Other: _____ |

This office action is responsive to communications filed 05/10/2002.

Claims 1 – 17 are pending.

1. The applicant is reminded to update the status of parent application(s) referred to on page 1 of the specification.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. (a) Both the resilient elements recited in Claim 13 must be shown (*Currently the drawing shows only one resilient element (50)*) and (b) the intermediate configuration for the valve recited in claims 1, 12 and 16 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to because the following features essential to a proper understanding of the invention are not currently labeled: proximate valve element (40) and orifice (36). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4. The following suggestions are offered to the applicant to place the claims in better form:

In claim 13, line 3, it is suggested that "members" be replaced with - - elements - -.

In claim 17, line 12, it is suggested that "regulator" be replaced with - -transducer - - since the disclosure does not disclose a pressure regulator and this office action considers the limitation to correspond to a pressure transducer.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 3, 4, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakashima et al. (US 5,259,355) in view of Cook et al. (US 5,579,741).

Nakashima et al. discloses (figs. 1, 2) a device (12, 22) for controlling the fluid flow between an evaporative emission space of a fuel tank (7) and a fuel vapor collection canister (37), the device comprising:

A housing (12, 22) including a first port (17), a second port (at the location opening into pipe (36)), and a fluid flow path extending between the first and second ports, the first port (17) being adapted to receiving fluid flow from the evaporative emission space and being at a first pressure level, and the second port (at the location opening into pipe (36)) being adapted for supplying fluid flow to the vapor collection canister (37) via pipe (36) and being at a second pressure level (because of the pressure drop near the valve element (23));

A valve (23) movable along an axis with respect to the housing (12, 22) between a first configuration (open, Col. 5, lines 9, 10) and a second configuration (closed, Col. 4, lines 62 - 63) with an intermediate configuration (intermediate between open and closed) being inherent;

An electric actuator (25) being disposed within the housing (22) and operatively coupled to the valve element (23);

An electric transducer (14, 19, 20) being disposed within the housing (12) and in fluid communication with the fluid flow path, the electric transducer (14, 19, 20) sensing the first pressure level; and

An electrical connector being disposed on the housing (See fig. 1 that shows electrical communication between elements (20, 22) and the controller (44)), the electrical connector including a first set of terminals in electrical communication with the electrical actuator (25) (located in the housing (22)) and including a second set of terminals in electrical communication with the electrical transducer (14, 19, 20).

The patent to Nakashima et al. ('355) discloses the claimed invention with the exception of disclosing a seal at an interface between the housing and the valve, the seal including an annular lip projecting obliquely with respect to the axis in the first configuration of the valve.

Cook et al. ('741) discloses (Figs. 1 – 3) a seal element (32) located at an interface between a valve element (30) and the housing (12), with the seal having annular lip (38) projecting obliquely with respect to an axis, so that the seal functions as an impact absorber and reduces noise upon impacting of the seal with the valve seat (Col. 4, lines 50 – 54).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the valve member (23) of Nakashima et al. with a seal (32) of Cook et al. ('741) for the purpose of providing shock absorption as well as noise attenuation as recognized by Cook et al. ('741).

Regarding claim 3, it is noted that the electric transducer (14, 19, 20) provides a first electric signal used in controlling the electrical actuator (25) (Col. 4, line 63 – Col. 5, line 10).

Regarding claim 4, it is noted that the electrical signal from the transducer (14, 19, 20) is a feed back signal comprising the level of pressure within the evaporative emission space of the tank.

Regarding claim 9, it is noted that the electrical actuator (25) is indeed a solenoid.

Regarding claim 10, it is noted that the seal in the combination of Nakashima et al. and cook et al. ('741) corresponds to the seal (32) in Cook et al. ('741) that comprises a hollow frustum including an inner surface and an outer surface with a tip (in (38)) disposed between the inner surface and the outer surface, the inner surface being in fluid communication with the first port (17) when the tip contacts the housing (22), and the outer surface being in fluid communication with the second port (at the location opening into pipe (36)) when the tip contacts the housing.

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Nakashima et al. (US 5,259,355) and Cook et al. (US 5,579,741) as applied to claims 1, 3, 4, 9 and 10 and further in view of Cook et al. (US 5,5803,056).

Nakashima et al. ('355) discloses the invention claimed with the exception of disclosing a third terminal in common electrical connection with both the electric actuator and the transducer. Nakashima et al. ('355) discloses (fig. 1) two terminals one each from the sensor unit (20) and the actuator (25) in the valve (22).

Cook et al. ('056) discloses a third terminal (96) in common electrical communication with both the electric actuator (62) via leads (94) and the electric transducer (86) via leads (92), so as to provide a compact electrical connection between the transducer/actuator and the engine control unit (i.e. engine management computer) (Col. 4, line 60 – Col. 5, line 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided in the combination of Nakashima et al. ('355) and Cook et al. ('741) a third terminal in common electrical communication with the

Art Unit: 3753

transducer and the actuator for the purpose of providing a compact electrical connection between the transducer/actuator and the engine control unit, as recognized by Cook et al. ('056).

9. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakashima et al. (US 5,259,355) in view of Cook et al. (US 5,5803,056).

Nakashima et al. ('355) discloses (figs. 1, 2) a method (Col. 3, lines 4 – 55 & Col. 4, lines 52 – 55) for connecting a device (12, 22) for controlling the fluid flow between an evaporative emission space of a fuel tank (7) and a fuel vapor canister (37), the fuel tank (7) and the canister (37) being mounted on a vehicle including fluid conduits (36, 39, etc.) and an electric wiring harness (connecting the various electrically operated devices to the control circuit (44)), the method comprising:

Mounting a housing of the device on the vehicle;

Establishing a first fluid communication path (via (17)) (see fig. 2) between the device (12, 22) and the evaporative emission space of the fuel tank (7);

Establishing a second fluid connection between the device (12, 22) and the fuel vapor canister (37) via the pipe (36); and

Establishing an electrical connection (see fig. 1) between the wiring harness (associated with the control unit (44)) and both of a valve actuator (25) and a pressure transducer (14, 19, 20) (the regulator is being read here as a transducer to be consistent with the specification) that are commonly disposed within the housing (12, 22) of the device.

Nakashima et al. ('355) discloses the invention claimed with the exception of disclosing a single electrical connection between the wiring harness and the actuator/transducer. Nakashima et al. ('355) discloses (fig. 1) two terminals one each from the sensor unit (20) and the actuator (25) in the valve (22).

Cook et al. ('056) discloses a single terminal (96) in common electrical communication with both the electric actuator (62) via leads (94) and the electric transducer (86) via leads (92), so as to provide a single electrical connection for the purpose of simplifying the electrical connection between the transducer/actuator and the engine control unit (i.e. engine management computer) via a wire harness (Col. 4, line 60 – Col. 5, line 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided a single electrical connection in Nakashima et al. ('355) between the transducer/actuator and the engine control unit (i.e. engine management computer) via a wire harness for the purpose of simplifying the electrical connection between the transducer/actuator and the engine control unit, as recognized by Cook et al. ('056).

10. Claims 5 – 8 and 11 – 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record neither shows nor teaches a combination for the claimed device that comprises in combination with other recited elements: (a) the first pressure

level comprising a negative pressure relative to ambient, and the first electric signal is provided to a first subset of the second set of terminals or (b) a first valve element including at least one orifice, the at least one orifice providing the restricted flow between the first and second ports; and a second valve element positionable between first and second arrangements with respect to the first valve element, the first arrangement of the second valve being spaced from the first valve element in the intermediate configuration, and the second arrangement of the second valve engaging the first valve element in the second configuration or (c) the seal in the intermediate configuration deforming in response to a differential between the first and second pressure levels.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tanamura et al. discloses a fuel vapor control valve device. Abe et al. discloses a purge system for evaporated fuel from an internal combustion engine. Yamashita et al. discloses a fuel vapor processing apparatus of an internal combustion engine. Neron et al. discloses a solenoid actuated spring-biased valve placed downstream of the canister. Ito discloses a system and method for adjusting the internal pressure of a fuel tank. Wade et al. discloses a combination pressure sensor and regulator.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramesh Krishnamurthy whose telephone number is (703) 305 - 5295. The examiner can normally be reached on Monday - Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael P. Buiz, can be reached on (703) 308 - 0871. The fax phone number for the organization where this application or proceeding is assigned is (703) 308 - 7765.

Art Unit: 3753

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 - 0861.

A handwritten signature in black ink, reading "Ramesh Krishnamurthy". The signature is written in a cursive style with a large, stylized initial 'R'.

Ramesh Krishnamurthy
Examiner
Art Unit 3753
April 17, 2003